

REMARKS

Claims 1-14, 16-21, and 23-64 are all of the claims pending in the present Application. Claims 1-14, 16-21, 23-26, 28-35, 37, and 38 are allowed.

Claims 27, 39-41, 46, and 47 stand rejected under 35 USC §102 (b) as anticipated by Japanese Patent JP-09-148810 to Ishitobi, and claims 42, 43, 54, and 55 stand rejected under 35 USC §103(a) as unpatentable over Ishitobi. Claims 44, 50, and 51 stand rejected under 35 USC §103(a) as unpatentable over Ishitobi, further in view of US Patent 5,796,318 to Ando et al. Claims 45, 52, and 53 stand rejected under 35 USC §103(a) as unpatentable over Ishitobi, further in view of Ando et al., and further in view of US Patent 5,764,115 to Hatton. Claims 48, 56, and 57 stand rejected under 35 USC §103(a) as unpatentable over Ishitobi, further in view of US Patent 4,578,655 to Etienne et al. Claims 49, 58, 59, 62, and 63 stand rejected under 35 USC §103(a) as unpatentable over Ishitobi, further in view of US Patent 4,675,630 to Tang et al., prior art supplied by Applicants, and US Patent 4,780,691 to Fiedziuszko.

Claim 60 stands rejected under 35 USC §103(a) as unpatentable over Ishitobi, further in view of Ando, further in view of Tang, prior art supplied by Applicants, and Fiedziuszko. Claim 61 stands rejected under 35 USC §103(a) as unpatentable over Ishitobi, further in view of Ando, further in view of Hattori, further in view of Tang, prior art supplied by Applicants, and Fiedziuszko. Claim 64 stands rejected under 35 USC §103(a) as unpatentable over Ishitobi, further in view of Etienne, further in view of Tang, prior art supplied by Applicants, and Fiedziuszko.

These rejections are respectfully traversed in view of the following discussion.

It is noted that the claims have been amended solely to more particularly point out the present invention for the Examiner, and not for distinguishing over the prior art or for statutory requirements directed to patentability. It is further noted that, notwithstanding any claim amendments made herein, Applicants' intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

I. THE CLAIMED INVENTION

As described and claimed, for example by amended claim 27, in one embodiment, the present invention is directed to a dielectric resonator including a dielectric block having a

generally rectangular parallelepiped shape. Three resonant modes of the dielectric block are coupled by reason that the dielectric resonator has a first plane formed by chamfering a single one of a ridge portion of the dielectric block and a second plane formed by chamfering a single one of a second ridge portion of the dielectric block.

The first chamfered ridge portion is not parallel to the second chamfered ridge portion, the first chamfered ridge portion and the second chamfered ridge portion do not cross each other, and no other ridge portions in the dielectric block is chamfered. The coupling amount of the three resonant modes of the dielectric block is varied by changing dimensions of the first plane and the second plane, respectively.

The present invention has a number of advantages over the conventional art, including a feature that the various modes are simultaneously coupled.

II. THE PRIOR ART REJECTIONS

The Examiner alleges that JP-09-148810 to Ishitobi anticipates claims 27, 39-41, 46, and 47, renders obvious claims 42, 43, 54, and 55, renders obvious claims 44, 50, and 51 in view of Ando, and renders obvious claims 4, 17, 20, and 32 in view of Ando, further in view of Hattori. The Examiner further alleges that Ishitobi renders obvious claims 45, 52, and 53 in view of Ando and Hatton, claims 48, 56, and 57 in view of Etienne, and claims 49, 58, 59, 62, and 63 in view of Tang, prior art supplied by Applicants, and Fiedziuszko.

The Examiner further alleges that Ishitoba renders obvious claim 60 in view of Ando, Tang, prior art supplied by Applicants, and Fiedziuszko, claim 61 in view of Ando, Hattori, Tang, prior art supplied by Applicants, and Fiedziuszko, and claim 64 in view of Etienne, Tang, prior art supplied by Applicants, and Fiedziuszko.

However, a key feature of the present invention is that, in one preferred embodiment, only two non-parallel ridges of the dielectric block are chamfered.

This feature allows a coupling so that all three resonant modes are intercoupled. That is, unlike the coupling in Ishitobi in which $K_{13} = 0$, in the present invention, $K_{13} \neq 0$.

Hence, turning to the clear language of the claims, relative to independent claims 27 and 36, there is no teaching or suggestion of “... and no other ridge portions in said dielectric block is chamfered”. None of the additionally-cited prior art, Ando, Hattori, Etienne, Tang,

prior art supplied by Applicants, or Fiedziuszko, overcomes this deficiency of Ishitobi.

Relative to independent claims 39, 41, and 42, another key feature of a preferred embodiment of the present invention is that the dielectric block is devoid of a conductive layer coating on its exterior. In contrast, Ishitobi, as described in paragraph 0007, relies upon a metal external coating layer. Independent claims 39, 41, and 42 have been amended to clarify the language for the Examiner's benefit.

A consequence of this basic configuration difference is that the couplings of the three resonant modes of the dielectric block of the present invention are inherently completely different from those of Ishitobi.

Hence, turning to the clear language of the claims, relative to independent claims 38, 41, and 42, there is no teaching or suggestion of " ... said dielectric block being devoid of a conductive layer coating...."

None of the additionally-cited prior art, Ando, Hattori, Etienne, Tang, prior art supplied by Applicants, or Fiedziuszko, overcomes this deficiency of Ishitobi.

For this reason, the claimed invention is fully patentable over the cited references.

Further, the other prior art of record has been reviewed, but it too, even in combination with Ishitobi, Ando, Hattori, Etienne, Tang, prior art supplied by Applicants, or Fiedziuszko, fails to teach or suggest the claimed invention.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-14, 16-21, and 23-64, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,



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